Treatment Modalities and Outcomes Following Acetabular Fractures in the Elderly: A Systematic Review and Meta-Analysis

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Purpose: The treatment for elderly patients with acetabular fractures remains controversial. Treatment options include nonoperative management as well as open reduction and internal fixation (ORIF), total hip arthroplasty (THA) with or without concurrent fracture fixation, and closed reduction and percutaneous pinning (CRPP). There is currently no consensus on the optimal treatment strategy for geriatric patients with acetabular fractures. The purpose of this study is to compare the outcomes of the various treatment modalities in order to help guide surgical decision making.

Methods: We performed a systematic review of literature to identify observational and comparative studies including patients age ≥55 years with acetabular fractures.

Results: 39 studies (3947 patients with average age of 72.6 years, age range 55-99 years) met our eligibility criteria. There were 1413, 220, 205, 146, and 1821 patients treated by ORIF, CRPP, THA, ORIF + THA, and nonoperative management with average ages of 70.68, 72.8, 71.7, 74.9, and 75.7 years, respectively. The pooled mortality rate of all patients was 18.9% (range, 15.3-22.9%), and the pooled rate of non-fatal complications was 27.4% (21.2-34.3%). For patients treated with fracture fixation, the pooled conversion to THA rate was 18.2% (13.2-23.8%).

Conclusion: We report on outcomes following acetabular fractures in elderly patients treated nonoperatively, with CRPP, and with ORIF and/or THA. There were no significant differences in mortality rates between operative methods. CRPP resulted in a lower non-fatal complication rate than ORIF and THA. Operative fixation should be cautiously considered in elderly patients with acetabular fractures due to low anatomic reduction rates, high conversion to THA rates, and the operative time and blood loss expected during the procedure.